Dynamic memory allocation

Automatic allocation

When you declare variables or when you use strings within double quotes, the program takes care of all the memory allocation. You do not have to think about it.

Dynamic allocation
So far we have used variables, arrays with fixed size. But what happens if you do not know the size of the array you have to declare and / or if this size depends on another variable?

There are buit in function that allow us to declare varibalbe dynamically

- malloc()
- Malloc is a generic pointer so it should by typecasted

malloc
#include <stdlib.h>
void *malloc(size_t size);
The malloc() function allocates size bytes and returns a pointer to the allocated
memory
The memory is not initialized

How to use valgrind to check for memory leak

- Valgrind is a tool that helps you detect memory leaks and other memory-related errors in your C or C++ programs
- valgrind --leak-check=full ./your_program [arguments]